

B. Claims

The following is a complete listing of the claims, and replaces all earlier versions and listings.

1-3. (Cancelled)

4. (Previously Presented) A method for manufacturing a liquid discharge head comprising a passage for a liquid, which communicates with a discharge port for discharging the liquid, on a substrate with a liquid discharge energy generating element for generating energy used for discharging the liquid, the method comprising:

providing a first layer including a polymethyl isopropenyl ketone on the substrate;

providing, on the first layer, a second layer including a photosensitive material of a copolymer obtained by copolymerization of a methacrylate and a methacrylic acid, with a weight average molecular weight of the copolymer of 50,000 to 300,000 and a ratio of the methacrylic acid included in the copolymer of 5 to 30% by weight;

forming a second part of a mold of the passage from the second layer by exposing a part of the second layer, and removing an exposed part of the second layer using a developing solution;

forming a first part of the mold of the passage from the first layer by exposing a part of the first layer, and removing an exposed part of the first layer using a developing solution;

providing a coating layer to coat the mold; and
removing the mold to form the passage.

5. (Previously Presented) A method for manufacturing a liquid discharge head comprising a passage of a liquid, which communicates with a discharge port for discharging the liquid, on a substrate with a liquid discharge energy generating element for generating energy used for discharging the liquid, the method comprising:

providing a first layer including a polymethyl isopropenyl ketone;

providing, on the first layer, a second layer including a photosensitive material of a copolymer obtained by copolymerization of a methacrylate and a methacrylic anhydride, with a weight average molecular weight of the copolymer of 10,000 to 100,000 and a ratio of the methacrylic anhydride included in the copolymer of 5 to 30% by weight;

forming a second part of a mold of the passage from the second layer by exposing a part of the second layer, and removing an exposed part of the second layer using a developing solution;

forming a first part of the mold of the passage from the first layer by exposing a part of the first layer, and removing an exposed part of the first layer using a developing solution;

providing a coating layer to coat the mold; and
removing the mold to form the passage.

6-8. (Cancelled)

9. (Previously Presented) The method for manufacturing a liquid discharge head according to claim 4, wherein a first wavelength of light used to expose the first layer is in a 270 nm to 350 nm range, and a second wavelength of light used to expose the second layer is in a 230 nm to 260 nm range.

10-15. (Cancelled)

16. (Previously Presented) The method for manufacturing a liquid discharge head according to claim 5, wherein a first wavelength of light used to expose the first layer is in a 270 nm to 350 nm range, and a second wavelength of light used to expose the second layer is in a 230 nm to 260 nm range.

17-27. (Cancelled)